Go Native!

Why Native Plants are Important

Presented by
Harford County Master Gardeners

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Go Native!

Why Native Plants are Important

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Summer in the Garden

- Native plants occur naturally in their ecoregion and habitat where over the course of evolutionary time they have adapted to physical conditions and co-evolved with the other species in the system.

Non-Native Plants

- A plant introduced with human help (intentionally or accidentally) to a new place or a new type of habitat where it was not previously found. Note: not all non-native plants are invasive. In face, when many non-native plants are introduced to new places, they cannot reproduce or spread readily without continued human help (for example, many ornamental plants.)

Invasive Plants

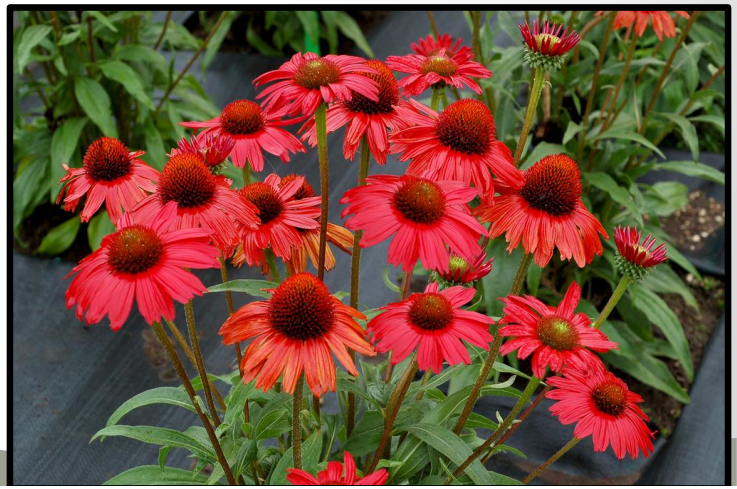
- An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Noxious Plants

- A noxious plant is a weed that has been designated by an agricultural authority as one that is injurious to agriculture or horticultural crops, natural habitats or ecosystems, or humans or livestock. They are currently regulated by state/federal law.

What are the benefits of a native garden?

1. **Value for your Gardening Dollar**
   - Quick growing
   - Super tough
   - Long-lived
   - Grow in sync with local conditions
   - Can withstand regional climatic changes



What are the benefits of a native garden?

2. **Reduced Maintenance**
   - Resistant to disease, drought, and pests
   - Natives grow happily without a need for pesticides
   - Need little fertilizing or watering once established
   - Cover ground quickly to crowd out weeds
   - Grow well together

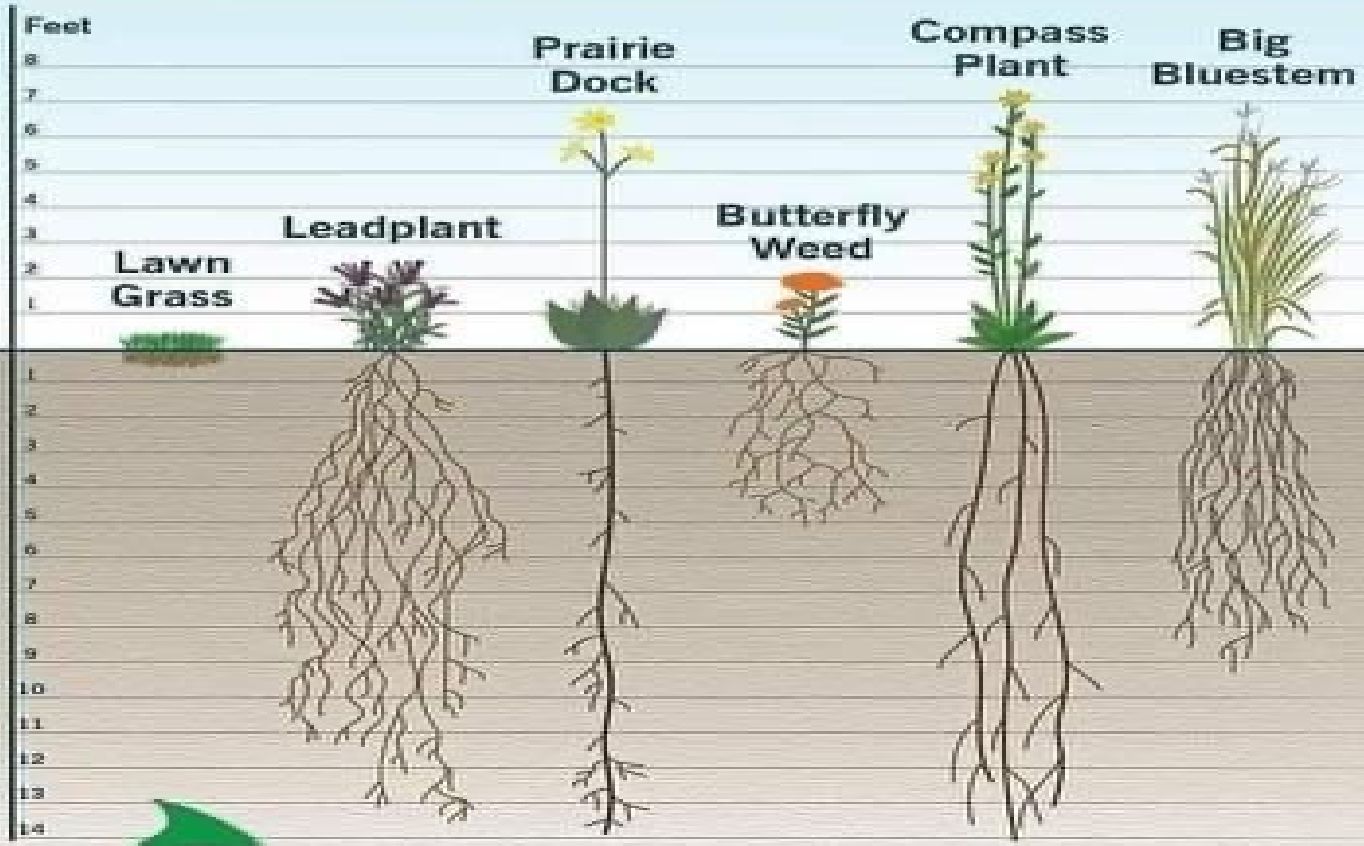
What are the benefits of a native garden?

3. **Soil and Water Conservation**
   - Keep soil in place
   - Store water where it's most needed
   - Stop storm water from running off into waterways

What are the benefits of a native garden?

4. **Refuge for Wildlife**
   - Build natural habitats
   - Produce fruit, nectar, seeds, and nuts at the times they are needed by year round inhabitants
   - Attracts bees, birds, butterflies, insects, and mammals

What's So Great About Native Plants?



ABOVE GROUND:

Native landscaping practices can help improve air quality.

Native species attract beneficial wildlife and support healthy and diverse ecosystems.

BELOW GROUND:

Their deep root systems filter pollutants from stormwater runoff.

Natives require less fertilizer, pesticides, and watering than non-native species.

Love Blue. Live Green.

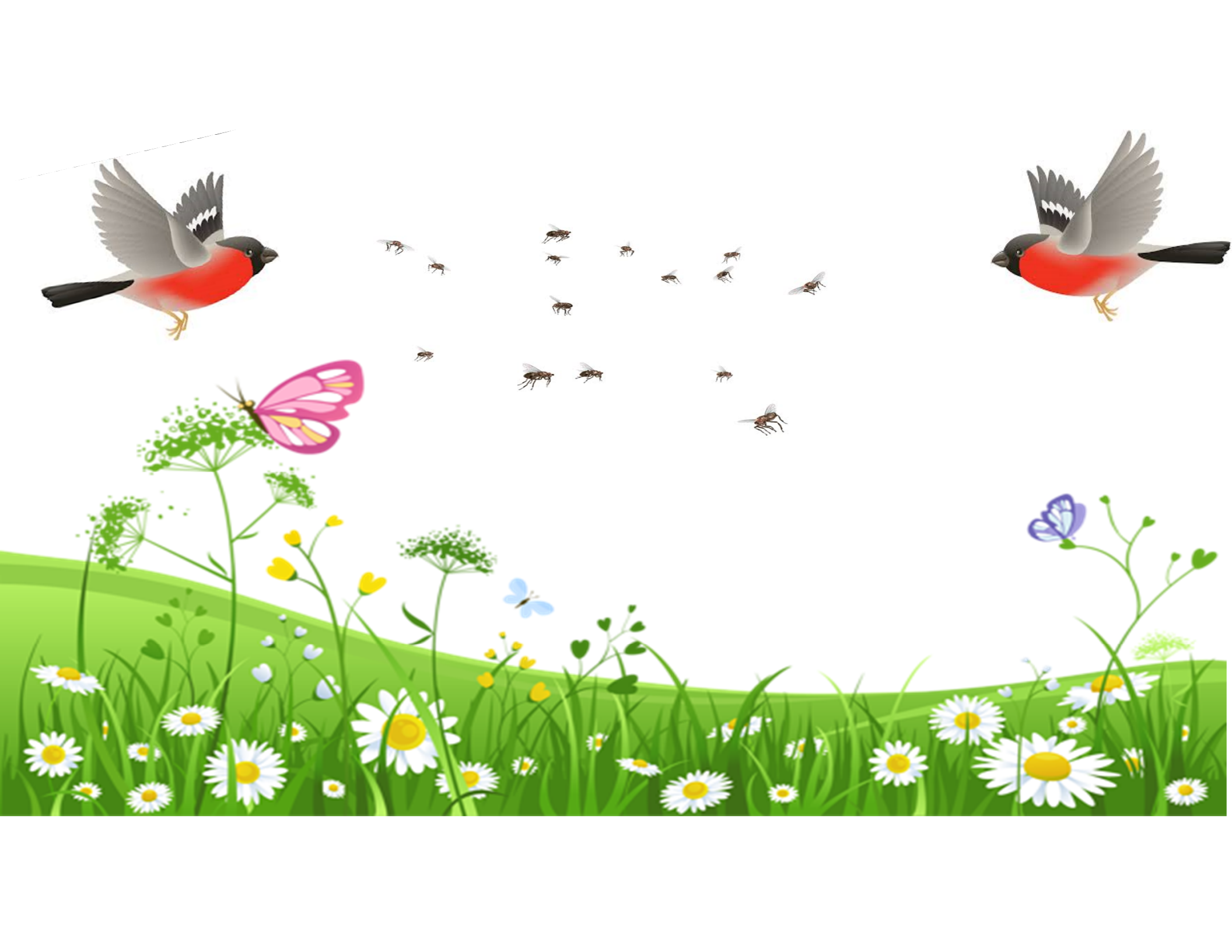
LEARN MORE AT WWW.DUPAGECO.ORG/SWM

Native plants are key to attracting native insects; insects, are the key to everything. Life as we know of it depends on insects. If you take those insects away, nasty things will happen… things that include the decimation of other local species that depend on insects. Birds, for example, depend on insects as a major part of their diets, or to feed their young. Without those food insects, bird populations take a nosedive. So far, 423 American bird species-- about one-third of the world's avian species overall-- are faced with extinction as a result of deforestation, habitat destruction, and the loss of food sources.

Worst of all? Invasive ornamental species such as Japanese honeysuckle and Bradford Pear, which are indigestible and uninhabitable by most native insect species, often breed out-of-check because of a lack of natural predators. Despite this, they're still coveted by gardeners for their aesthetics.

"Eighty percent of nursery plants [for sale] are non-native. It's become a regulated part of our culture. People don't think about native and non-native; they think in 'pretty.'

Doug Tallamy



Pollinators for the World's Flowering Plants

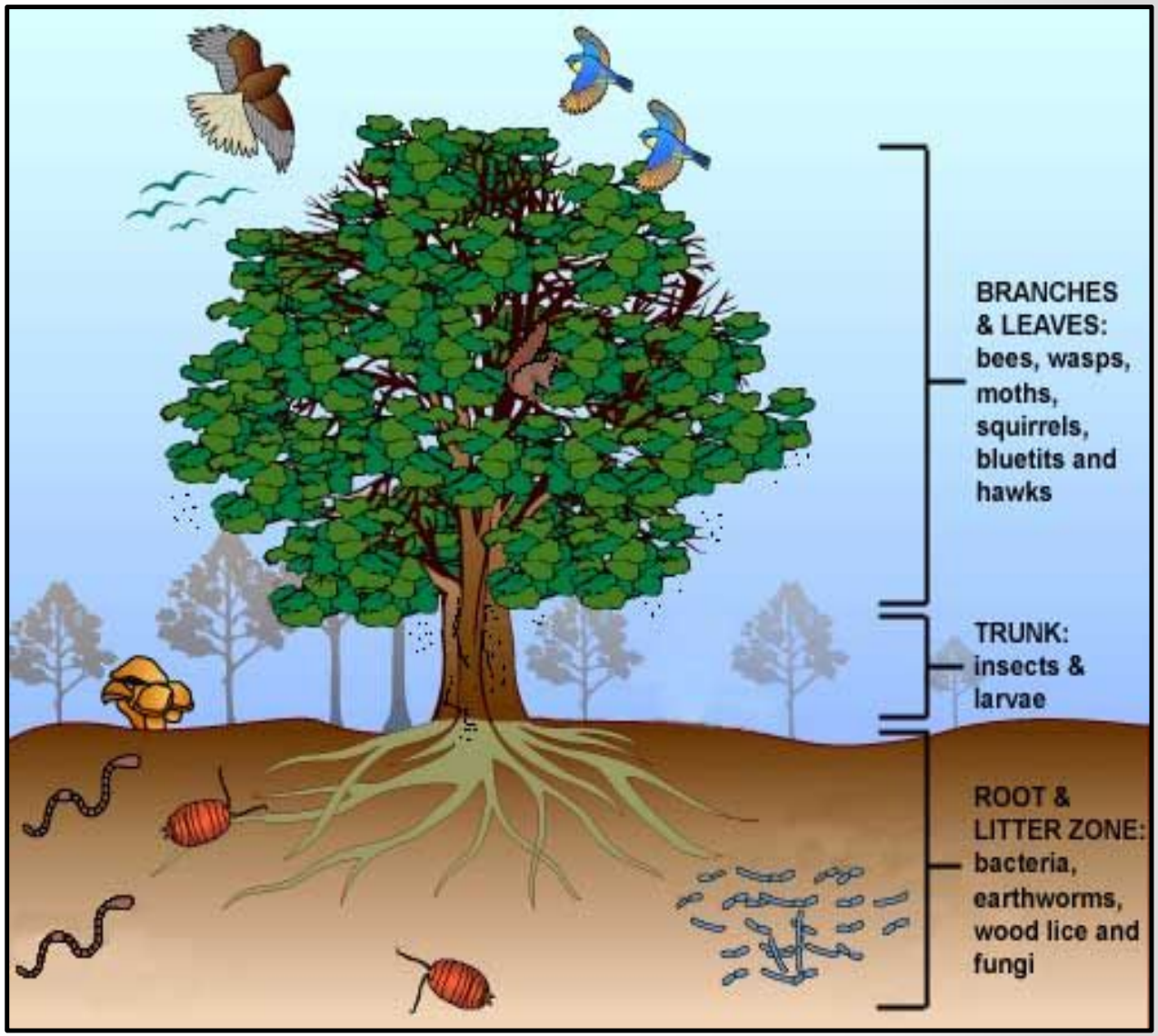
Data from Buchmann & Nabhan 1996

Categories of pollen vectors	Estimated # of Plant Species Pollinated	Total Percentage of Plant Species Pollinated*
Beetles	211,935	88.30
Other hymenoptera (wasp, ants)	43,295	18.00
Bees	40,000	16.60
Wind	20,000	8.30
Butterflies and Moths	19,310	8.00
Flies	14,126	5.90
All Vertebrates	1,221	.51
Birds	923	.40
Thrips	500	.21
All Mammals	298	.10
Bats	165	.07

*Total does not equal 100 due to pollination from more than one pollinator type.

Oak Trees

Native oak trees support over 500 species of caterpillars whereas ginkos, a commonly planted landscape tree from Asia, host only 5 species of caterpillars. When it takes over 6,000 caterpillars to raise one brood of chickadees, that is a significant difference.



5 Plants for Supporting Biodiversity in Our Area

Woody Plants

- Oak tree – 534 Species
- Black Cherry – 456
- Willow – 455
- Birch – 413
- Blueberry - 288

Perennials

- Goldenrod – 115 Species
- Aster – 112
- Sunflower – 73
- Joe Pye Weed – 42
- Black Eyed Susan - 17

Still wondering why you should plant native plants?

- What do you want to see in your garden?

Butterflies

Birds

Bees

Beauty

Butterflies

Butterfly Life Cycle

Egg → Caterpillars (instars) → Chrysalis (Pupa) → Adult (Imago)

Photo credit Marlene Lynch

Photo credit Diane Mitchell

Photo credit Diane Mitchell

Photo credit Ladew Topiary Garden

Photo credit Diane Mitchell

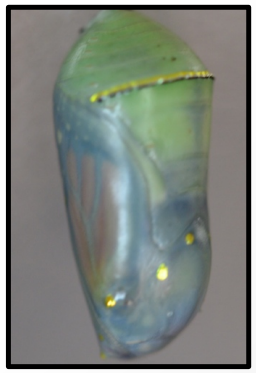
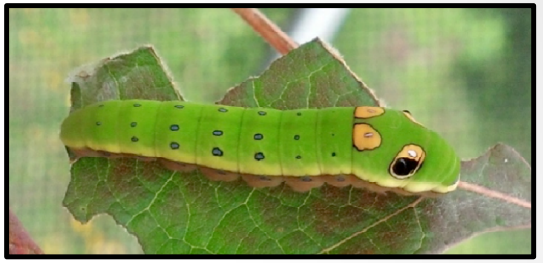


Photo credit Marlene Lynch

Caterpillar Food – Host Plants

- Caterpillars will eat solid food
- Some only eat one particular plant – host plant
  - monarch caterpillars eat only milkweed (*Asclepias* species) makes them poisonous.
  - Spicebush Swallowtail eats sassafras & Spicebush
  - Swallowtail eats fennel & dill
  - Great Spangled Fritillary eats violets



Spicebush Swallowtail

Photo Diane Mitchell

Great Spangled Fritillary

Photo Ladew Topiary Gardens

Butterfly Food - Nectar Plants

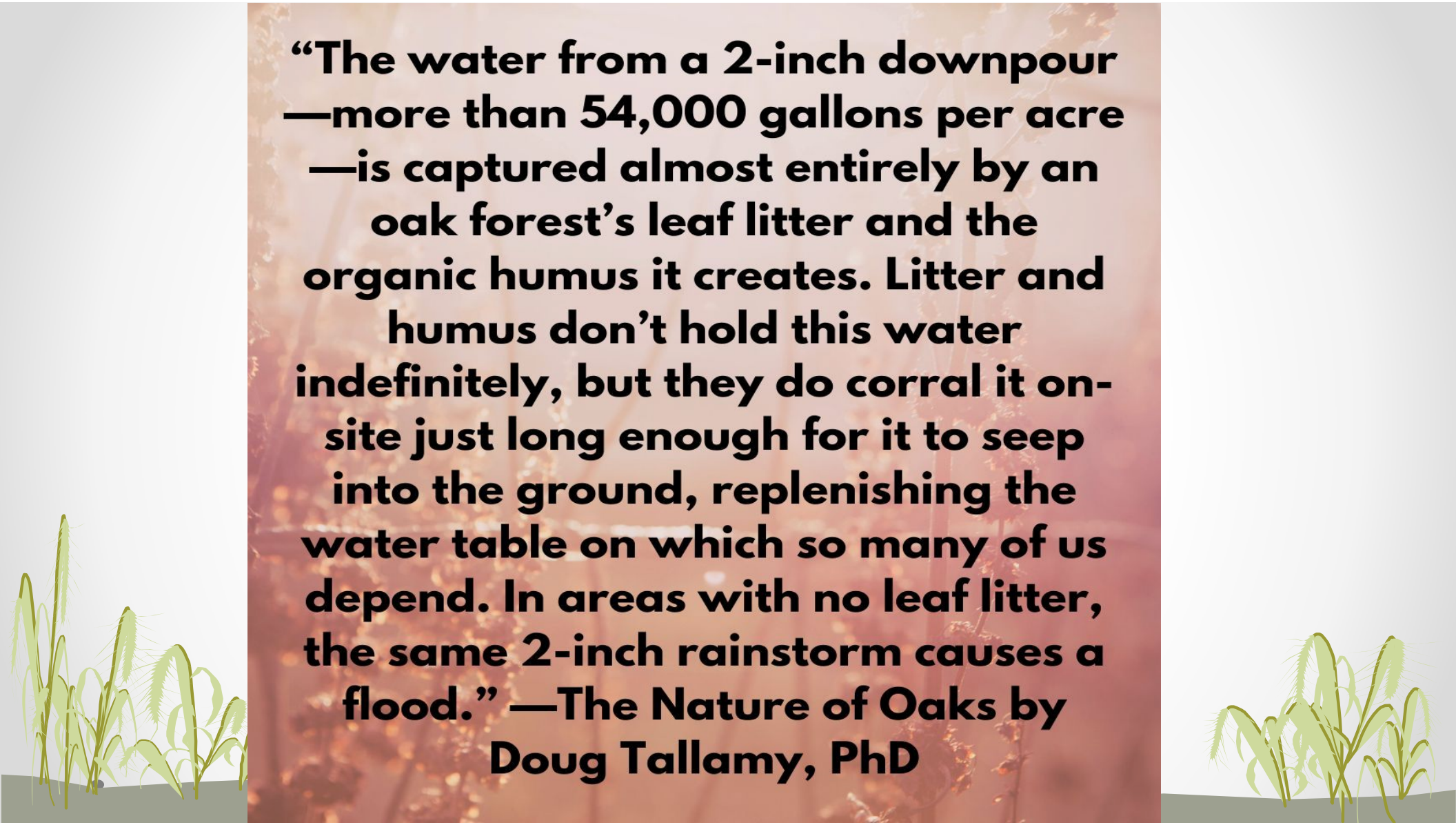
- Nectar plants are for the adult butterflies.
- Adult butterflies are on a liquid diet.
- Drink with long straw-like tube (proboscis)
- Taste with their feet
- They prefer purple, pink, red, yellow, or orange blossoms

Photo credit Ladew Topiary Garden

Butterfly – Garden Maintenance

- Butterflies overwinter
- Different species as adults, caterpillars or chrysalis
- Leaves, branches, barks or on soil

Photo Ladew Topiary Gardens


“The water from a 2-inch downpour —more than 54,000 gallons per acre —is captured almost entirely by an oak forest’s leaf litter and the organic humus it creates. Litter and humus don’t hold this water indefinitely, but they do corral it on-site just long enough for it to seep into the ground, replenishing the water table on which so many of us depend. In areas with no leaf litter, the same 2-inch rainstorm causes a flood.” —The Nature of Oaks by Doug Tallamy, PhD

Swallowtail Butterflies

Tiger Swallowtail –

photo source Diane Mitchell

Swallowtails are the largest, most easily recognized butterflies in our area. Wings often black and yellow tails. Strong flyers. Males patrol for females. They get extra nutrients from puddling.

Eastern Black Swallowtail


Photo by Kevin Heffernan Maryland Biodiversity Project


Photo Diane Mitchell

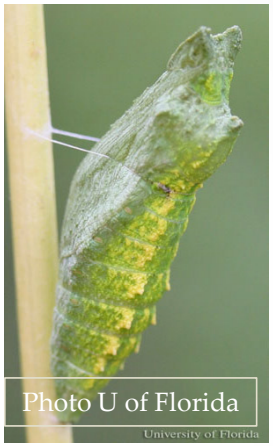


Photo U of Florida


Photo U of Florida

Eastern Black Swallowtail Host Plants

Carrot Family Plants

Fennel – photo Diane Mitchell

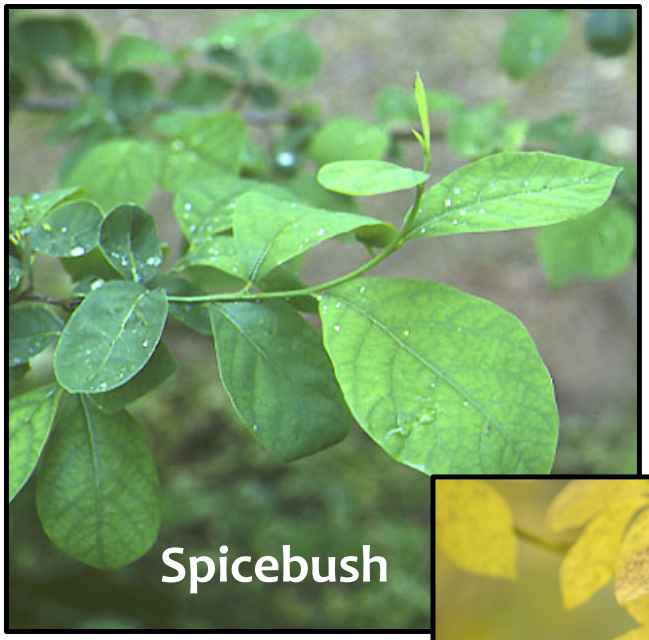
Parsley – Photo Diane Mitchell

Zizia aurorea – photo Missouri Botanical Garden

Spicebush Swallowtail

Caterpillar host plants

Spicebush
and Sassafras



Tiger Swallowtail

Male

Female

Tiger Swallowtail Host Plants


Photo Diane Mitchell

Caterpillar


Photo Missouri Botanical Garden

Liriodendron tulipifera


Photo Missouri Botanical Garden

Magnolia virginiana


Photo Missouri Botanical Garden

Prunus serotina

Tiger Swallowtail Host Plants- Tulip Poplar, Sweetbay Magnolia, Black Cherry

Baltimore Checkerspot & Host Plant

Baltimore checkerspots by Pat Durkin (left) and Scott Smith (right)

Official insect of Maryland
Endangered

White Turtlehead *Chelone glabra*

Monarch

Male Monarch Butterfly

Female Monarch Butterfly

Milkweed

The monarch population has decreased dramatically

- *Why?*
  - Widespread loss of habitat
  - Loss of milkweed plants
  - Lack of nectar plants during migration
  - Insecticide application
  - Proliferation of non-natives and invasive plant species
  - Logging of fir trees in which they roost on their wintering grounds in Mexico

Common Host Plants

Dill
Parsley
Fennel
Milkweed

False indigo
Spicebush
Wild cherry
Violets

Paw Paw
Plantain
Clover
Sassafras

Notice anything different about these milkweed plants?

- Common Milkweed is one of the more biologically active native plants, subject to:
  - ants/aphids
  - beetles
  - stem borers
  - moth/butterfly caterpillars
  - heavily pollinator traffic

This picture was taken in Ukraine where Milkweed is becoming invasive

If nothing is eating your garden, then it is not part of the ecosystem.

Birds

Birds need native plants

- Songbirds have been in decline since the 1960's, having lost 40% of their numbers so far.

Grasshopper Sparrow
65%

Field Sparrow
68%

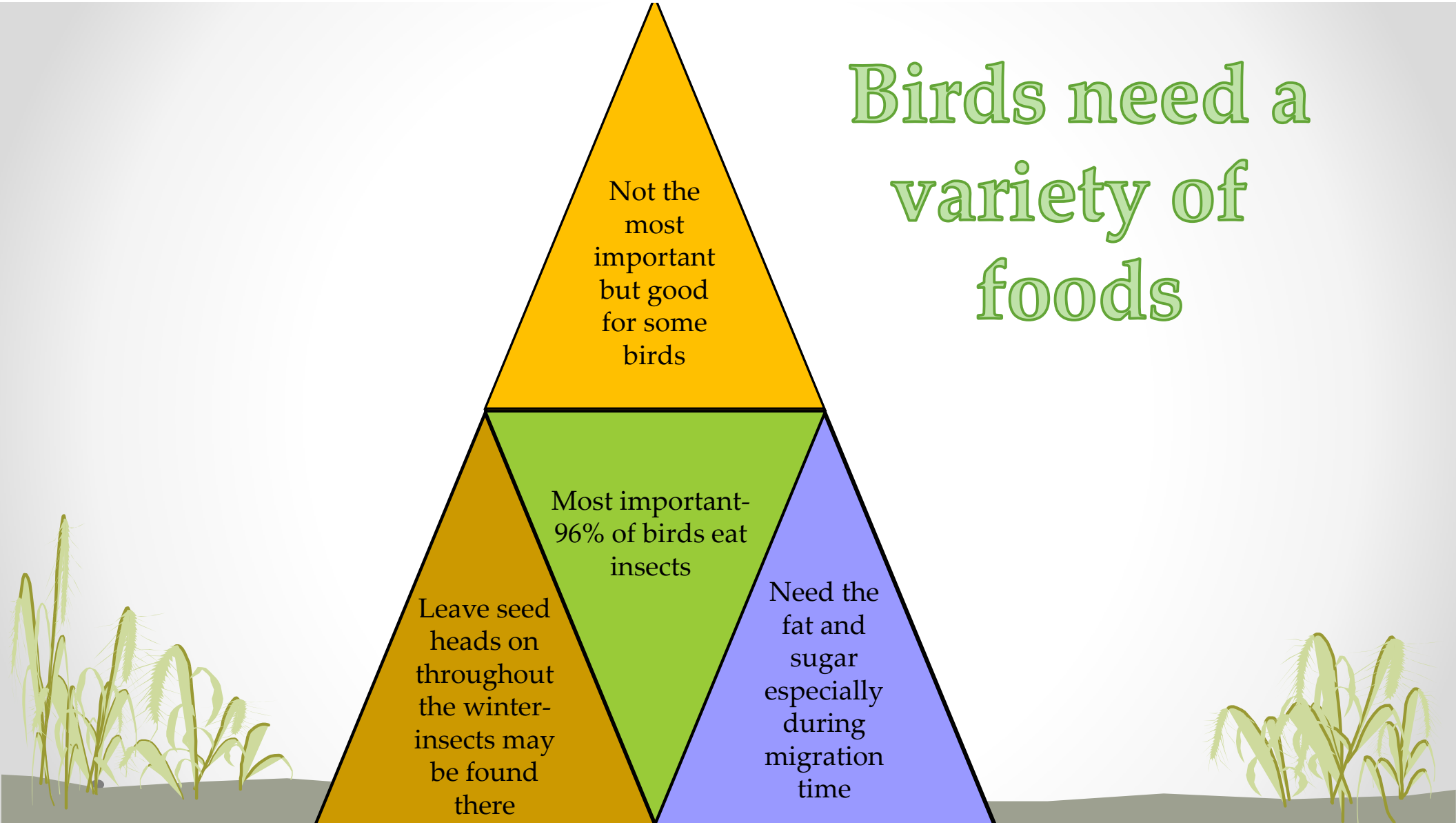
Eastern Meadowlark
72%

Northern Bobwhite
82%

Birds need high-quality and abundant food resources like fruit for successful migration.

- A variety of fruits are needed to satisfy their nutritional needs such as:
  - **Arrowwood**- (*Viburnum dentatum*)
    - high energy fruits that allow birds to refuel and have superior antioxidants
  - **Serviceberry** (*Amelanchier canadensis)*
    - less fat but more carbohydrates
  - **Native Bayberry** *(Morella pensylvanica)*
    - good for overwintering birds – berries persist through winter

Birds need a variety of foods



Flowers	Why birds love them
Sunflower	Seeds fuel long migrations
Milkweeds	Use fibers to spin nests
Cardinal Flowers	Hummingbirds love the nectar
Purple Coneflowers	Attract butterflies and provide seeds

Vines	**Why birds love them**
Trumpet Honeysuckle	Hummingbirds like nectar, Purple finches eat fruit, Orioles eat flower
Virginia Creeper	Key food source for fruit eating birds

Shrubs	**Why birds love them**
Button Bush	Provide seeds for duck and waterfowl
Elderberry	Fruit provides food for many birds
Winterberry	Abundant fruit during the winter

Trees	Why birds love them
Oak	Eat insects and acorns, use cavities for nesting and shelter
Dogwood	Cardinals, bluebirds eat fruit

Caterpillars

Recommended Plantings

Highly recommended

- Arrowwood viburnum (Viburnum dentatum)
- Virginia creeper (Parthenocissus quinquefoia)
- Gray dogwood (Cornus racemose)
- Silky dogwood (Cornus amomum)
- Red osier dogwood (Cornus sericea)

Recommended

- Serviceberry (Amelanchier spp.)
- Common elderberry (Sambucus Canadensis)
- Spicebush
- Pokeweed
- Flowering dogwood
- Chokecherry
- Highbush blueberry

Elements of a Bird-Friendly Yard

Snags provide nesting locations for woodpeckers and other cavity-nesting species.

Vines provide nesting locations; many produce berries.

Shrubs provide cover, nectar, and berries; provide nesting locations; attract insects.

Wildflowers attract pollinators and insects; produce nectar and seeds.

Grasses provide cover and seeds; attract insects; provide nesting materials.

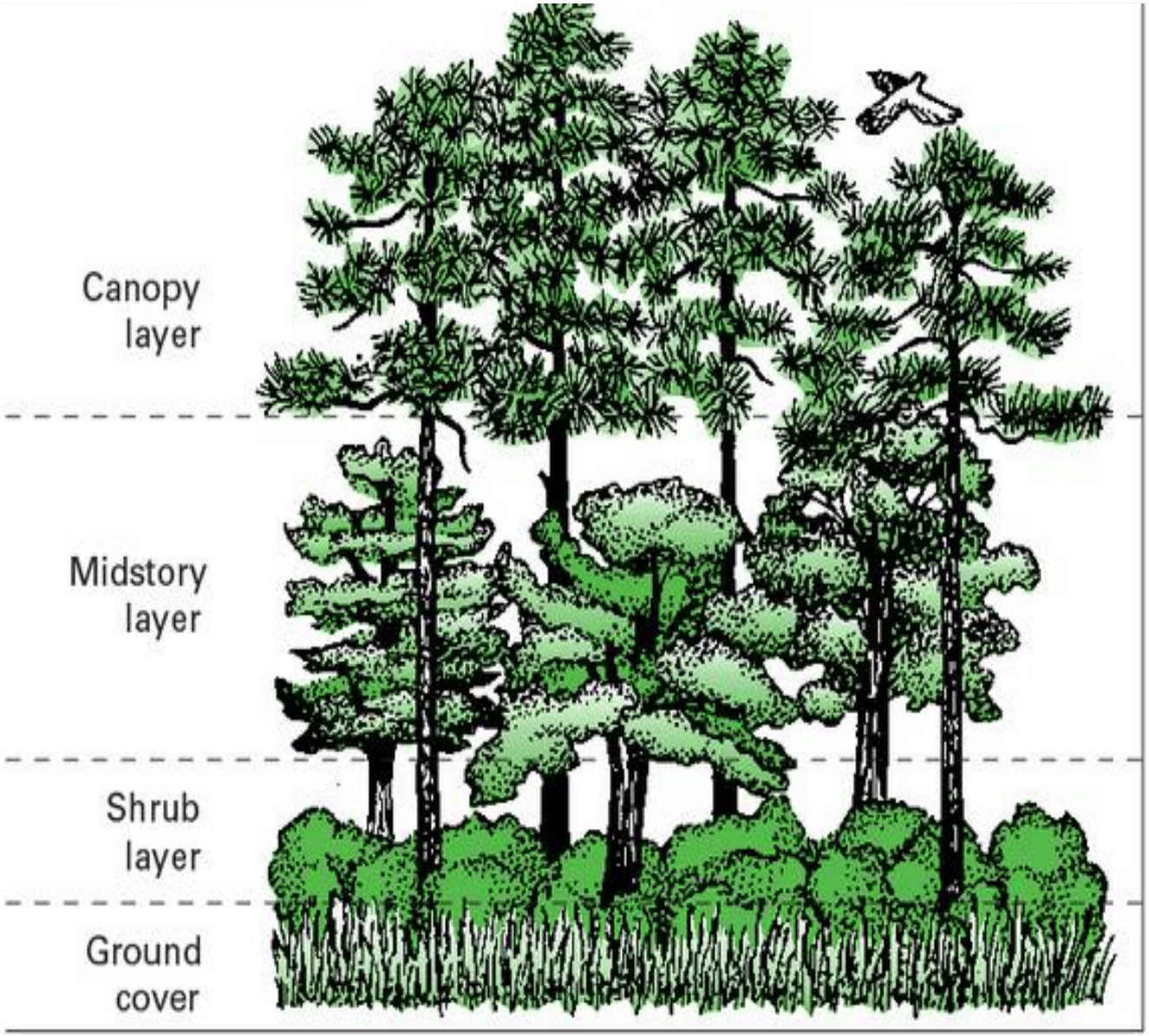
Nectar Plants attract hummingbirds and other pollinators.

Canopy Trees provide nest locations, nectar, berries, mast; attract insects.

Ground Covers attract insects; many produce nectar and berries.

Water attracts birds of all kinds. A moving water feature such as a waterfall is very enticing to birds.

Flycatcher
Crossbills
Swallows
Hawks
Band-failed pigeons
Siskins



Owls
Jays
Kiglets
Woodpeckers
Chickadees
Nuthatches

Flycatcher
Goldfinches
Juncos
Hummingbirds
Bushtits

Thrushes
Wrens
Song Sparrow

Bees

Maryland Native Bees

Bees are not Wasps

Bees	Wasps
Not normally aggressive unless provoked or defending nest	Naturally aggressive and predatory
More robust (rounded body shape)	Narrow waisted
Stings once then dies - Barbed stinger (except Bumble bee)	Smooth stinger, stings multiple times
Hairy - Branched body hairs	Much less hair – unbranched when present
Scopa on females (for pollen collection)	No scopa
Vegetarian (nectar & pollen)	Carnivorous (eat insects, spiders, bees)

It is best to attract a variety of bees to your garden

- Some bees are only attracted to or pollinate certain plants
- Some bees too large to pollinate certain plants
- Bee species populations vary at certain times of the year
- Some bee species have short life spans
- Different bee species emerge at different times

Maryland Native Bees

Bee Friendly Yard

- Plant a diversity of native flowers and plants, in clusters, not singularly
- Plant flowers and plants that bloom during Spring, Summer and Fall
  - Early bloomers help establish bees in Spring, Late bloomers help prepare for Winter.
- Leave patches of ground bare for ground nesting bees
- Leave cut plant canes for pith nesting bees
- Use little (or no) pesticides. If used, limit to non-neonicitinoids. Apply all pesticides correctly, more is NOT better.
- Install bee house (leave dead trees, stumps) for cavity nesters


NO BEES
NO ORANGES


NO BEES
NO APPLES


NO BEES


NO BEES


NO BEES
NO KIWIS


NO BEES


Food Desert

Interesting Facts

- 92% of our suburban areas is lawns, which does not contribute to local food webs.
- 79% of what is planted in our suburban areas is not locally native.
- 30% of the plants in our natural areas are invasive plants. In fact, there are over 3400 species of invasive plants in this country.
- 600 square miles of lawn is added in this country every year.

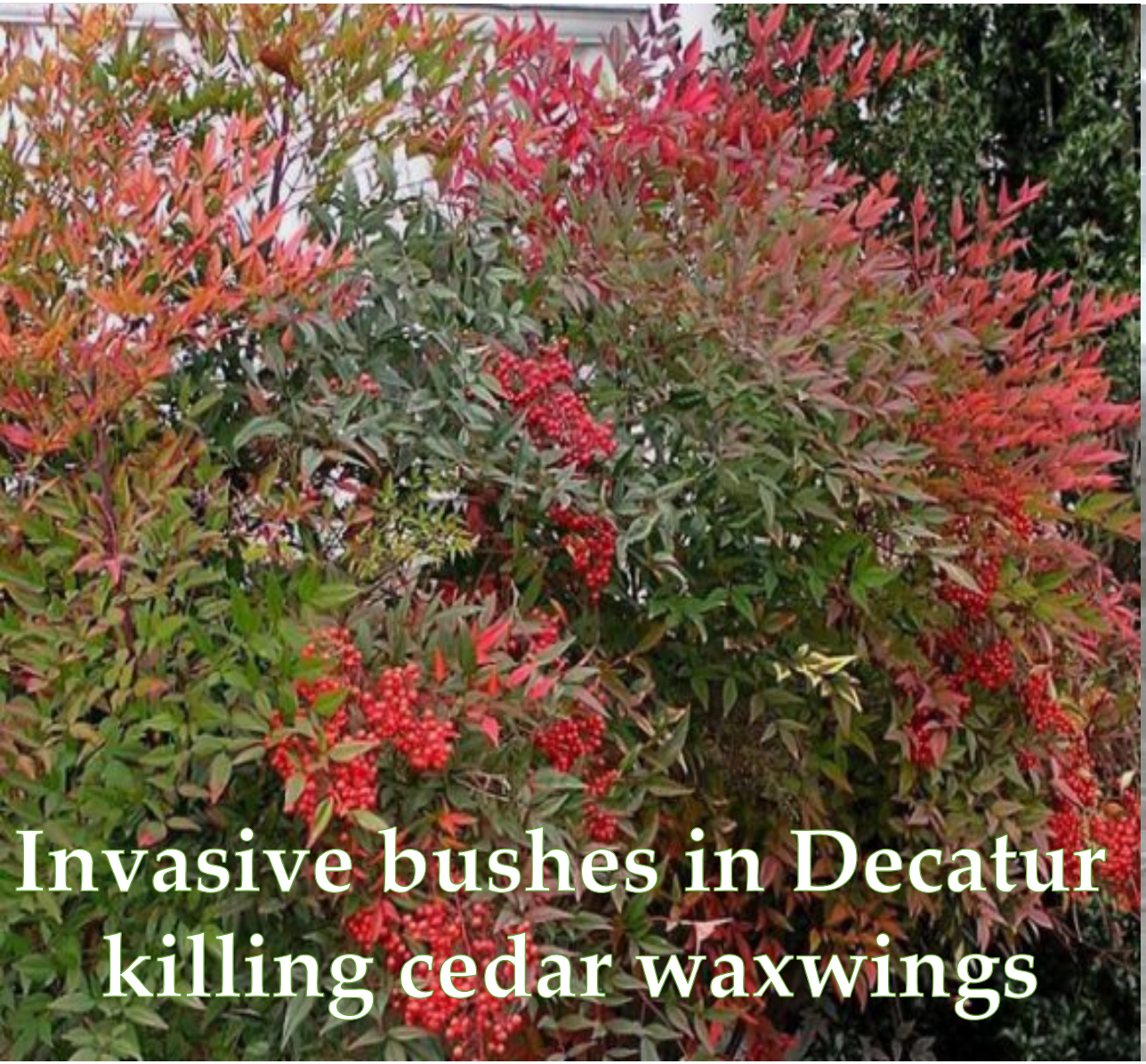

Monoculture

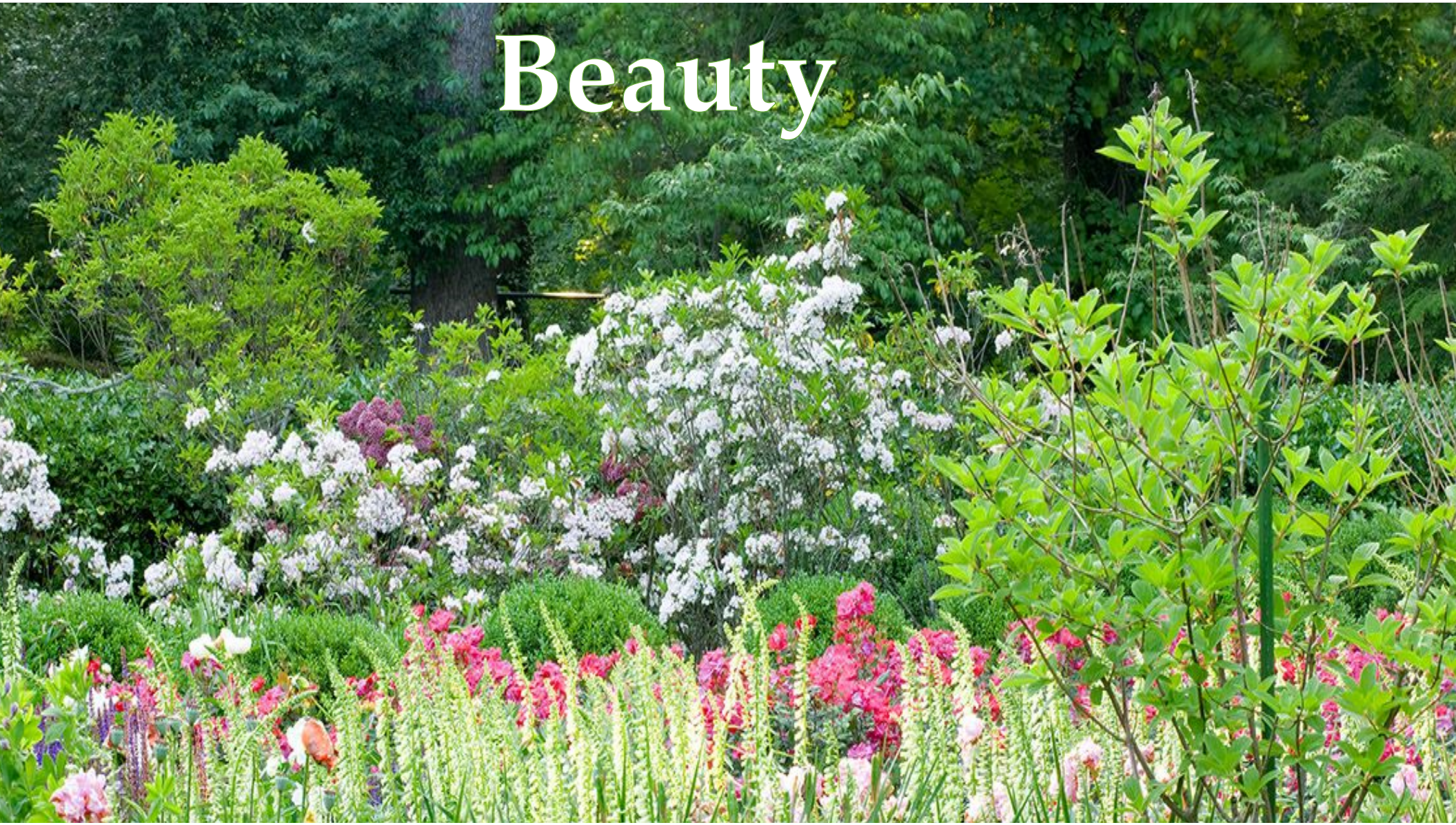
- *Studies have shown that even modest increases in the native plant cover on suburban properties significantly increases the number and species of breeding birds.*

Dr. Doug Tallamy

YEW TOXICITY KILLING IDAHO BIG GAME

Japanese yew


Invasive bushes in Decatur
killing cedar waxwings


Beauty

A Year in a Maryland Native Garden

Spring
March-May

Wild Columbine
Aquilegia canadensis

Wild Bleeding Heart
Dicentra eximia

Spring
March-May

Beard Tongue
Penstemon digitalis

Wild Geranium
Geranium maculatum

Common Milkweed
Asclepias syriaca

Swamp Milkweed
Asclepias incarnata

Butterfly Milkweed
Asclepias tuberosa

Summer
June-August

Purple Coneflower
Echinacea purpurea

Summer
June-August

Cardinal Flower
Lobelia cardinalis

Scarlet Bee Balm
Monarda

Fall
August-November

Gray Goldenrod
Solidago nemoralis

Smooth Blue Aster
Symphyotrichum laeve

Fall
August-November

Summer Phlox
Phlox paniculata

Joe Pye Weed
Eutrochium purpureumo

Winter
December-March

Winterberry
Ilex verticillata

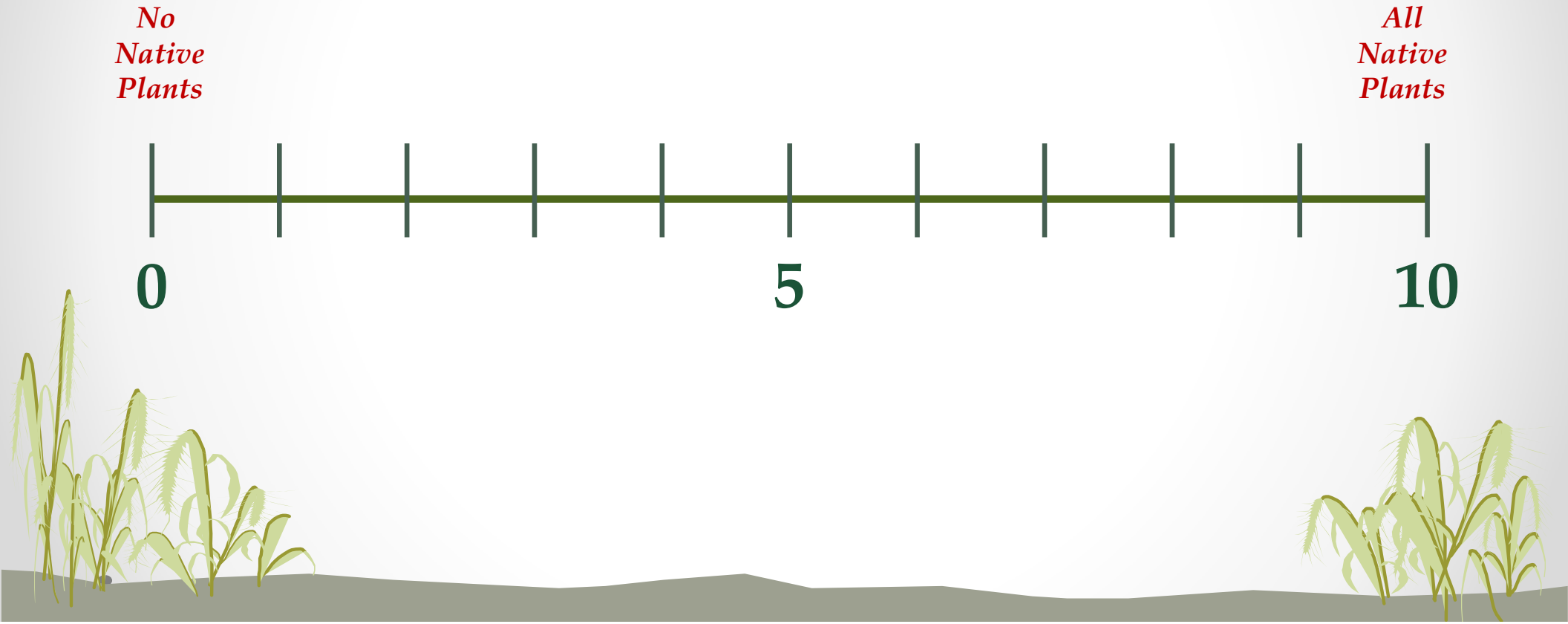
American Witch Hazel
Hamamelis virginiana

Winter
December-March

Little Bluestem
Schizachyrium scoparium

American Holly
Ilex opaca

Native Purist?



What about cultivars?

- ***Recent study led by Mt. Cuba and University of Delaware show:***
  - Little difference in abundance and diversity of insects
  - Cultivars that retain their green leaf color play a role in restoring and sustaining food webs
  - Ongoing studies are examining the impact that changes in flower shape, bloom time and other physical characteristics of cultivars have on wildlife

Native vs. Cultivar

Gaillardia pulchella
'Razzledazzle'

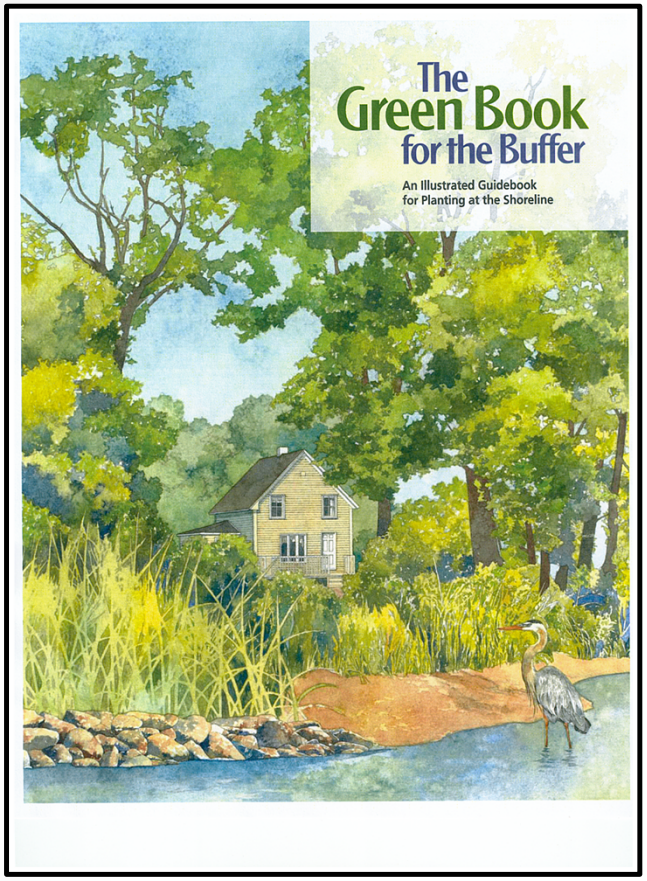
Landscaping with Native Plants

Maryland Native Plant Society

https://www.mdflora.org/resources/Publications/GardenersGuidelines/Landscaping-Natives.pdf

Download a copy at

https://mdflora.org/publications/gardenersguidelines/gguides.html



Garden Plans

http://dnr.maryland.gov/criticalarea/Documents/GreenBook_Buffer.pdf

Native Plant Nurseries

- American Native Plants – Joppa Rd. Perry Hall
- Cavano's Perennials – Sunshine Ave, Kingsville
- Herring Run Nursery – Hillen Rd., Baltimore
- Kollar Nursery – Heaps Rd., Pylesville
- Babikow Greenhouse – Essex, MD
- Putnam Hill Nursery – Forest Hill, MD
- Groff's Plant Farm – Street Rd., Kirkwood, PA

As gardeners and stewards of our land, we have never been so empowered to help save biodiversity from extinction, and the need to do so has never been so great. All we need to do is...

plant native gardens.

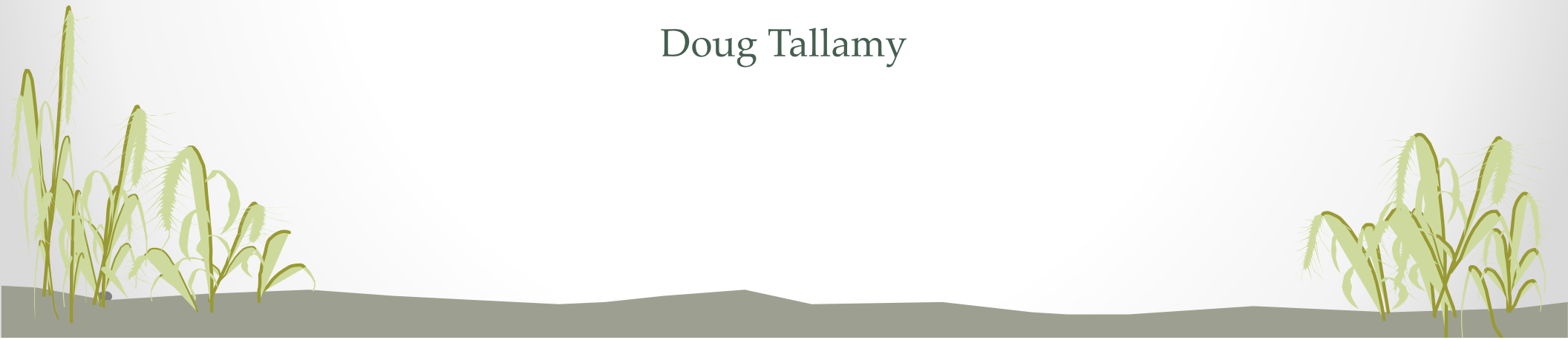
Dr. Doug Tallamy

Resources

- **Web addresses for books**
  - Native Plants of Maryland: What, When, and Where
    - http://extension.umd.edu/sites/extension.umd.edu/files/_docs/programs/master-gardeners/StateMG/Gardening-Topics/NP%20of%20MD-%202013.pdf
  - Landscaping with Native Plants
    - https://www.mdflora.org/resources/Publications/GardenersGuidelines/Landscaping-Natives.pdf
  - The Green Book for the Buffer
    - http://dnr.maryland.gov/criticalarea/Documents/GreenBook_Buffer.pdf
  - **Native host plant list from the Maryland Native Plant Society http://www.mdflora.org/Resources/publications/gardenersguidelines/gguidelines03.pd**

Homegrown National Park

Doug Tallamy



Questions?

Thank You!